DOCUMENT RESUME

ED 078 649 EM 011 179

AUTHOR	Meyer, Thomas C.
TITLE	Communications In Postgraduate Medical Education.
INSTITUTION	Alabama Univ., Birmingham, Medical Center.
PUB DATE	Apr 70
NOTE	6p.
JOURNAL CIT	The Alabama Journal of Medical Science; v7 n2 p212-16 April 1970
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Adult Education; Communications; *Dial Access Information Systems; Films; Health Occupations Education; Health Personnel; *Instructional Films; *Medical Education; Physicians; *Professional Continuing Education; Radio; State of the Art Reviews; *Telephone Instruction
IDENTIFIERS	University of Wisconsin; *UW Department of Postgraduate Education; Wisconsin

ABSTRACT

A consequence of the knowledge explosion in the medical sciences is that health care professionals are pressed for time to keep up with developments in their fields. To deal with this problem, the Department of Postgraduate Education of the University of Wisconsin has experimented with three methods of making current pertinent and authoritative information readily available to health care personnel. A dial-access telephone library contains several hundred tapes with information which is relevant to emergencies, to new discoveries, or which is hard to find elsewhere. Single concept medical films are offered to hospitals throughout the state, for viewing by staff. Finally, telephone/radio conferences bring lectures and discussions to participating hospitals. All three methods have been widely utilized by professionals in Wisconsin. (PB)

ED 078649

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Reprinted from THE ALABAMA JOURNAL OF MEDICAL SCIENCES
Volume 7, Number 2, April, 1970

EM 011 179

FILMED FROM BEST AVAILABLE COPY

Communications In Postgraduate Medical Education

Thomas C. Meyer

As a consequence of the information explosion which has enveloped almost all professional and non-professional disciplines since World War II we find ourselves in a dilemma. The essence of the dilemma is time—time to read, to think, to work, time for leisure. Time is finite, but the amount of printed information crossing our desks seems infinite. The avalanche of publications, books, journals, reports and budget statements is constantly increasing. Medicine is a discipline in which great strides and advances are being made at an alarming speed for those of us merely trying to keep up to date. With these advances comes the threat of obsolescence for the physician who is already overburdened with patient care responsibilities which may take 12-14 hours of his working day. He needs time to think, time to ponder the decisions which allow of optimal care to be delivered to his patient—perhaps the difference between life and death. Moreover, he needs time to obtain the information which is going to assist him in making those decisions.

In any educational system there are controlled and uncontrolled variables. The controlled variables are such well known entities as behavioral objectives, behavioral strategies, content, presentation, media, management, feedback and evaluation. More tantalizing to those of us in continuing professional education are the uncontrolled variables which include entry behavior, environment, politics, demography, finances and logistics. These factors seem more important in many respects when dealing with physician continuing education than other professions whose fields of interests do not appear to be so wide, so diverse or so prone to rapid change. The constraints on a physician's time seem so inflexible that the Department of Postgraduate Education of the University of Wisconsin is experimenting with the means by which we might in due course be able to exert some influence over the uncontrolled variables. We have no intention of tampering with such variables as politics but there do seem to be possibilities in the finances, the environment and logistics. Individualized instruction can provide partial solutions to these problems. Perhaps it would be of value to recount some of our experiences in these attempts to find solutions for there is surely not one single solution to continuing medical education.

We have made one basic assumption that may or may not be valid. This assumption is that a student of any age, background or intelligence learns best when pertinent information is presented to him at the time when he really requires it. The motivation, time of day or night, or circumstances of his desire to learn are comparatively unimportant. Equally, the form in which he obtains the information is less important than the fact that he finds out what he wants to know. Books, journals and conferences have long been the standard means for a physician to obtain information and we have no dispute with these as the way in which a great number of physicians keep abreast of current medical thought. There are, however, individuals whose learning is greater by means other than the printed word and attendance at conferences. Therefore, we are experimenting with methods of making current, pertinent and authoritative information readily available to undergraduate, graduate and postgraduate students in the health professions. I would like to discuss briefly three methods which have

engaged our attention with some preliminary evaluation.

A. Dial-Access Library

In an effort to provide physicians immediate access to current, pertinent and authoritative information a library of 88 self-rewinding cartridge tapes, each of approximately five minutes, was available to physicians in Wisconsin in the spring of 1966. These were available 24 hours a day and could be obtained merely by making a telephone call and requesting the tape. The subjects varied from life-saving measures as "The Management of Diabetic Coma" to such mundane subjects as "The Prevention of Knee Injury in Athletes" and contained subjects with as wide variation as "The Management of Bee Sting" and "Marriage on the Rocks." In essence the tapes contain core information on subjects:

1) Of emergency nature
2) Of recent discovery
3) Difficult to find elsewhere

The initial response was encouraging and with assistance from the Wisconsin Regional Medical Program we set about developing a more comprehensive dial-access library, the use of which could be evaluated more extensively and in greater depth than the count of calls received. In January of 1968 a library containing approximately 200 tapes was announced as a free service to physicians in Wisconsin. This has now increased to more than 300 tapes.

The physician can consult a brochure for the title of the tape he requires and dial into the library. His call will be answered by a pharmacist who will select the tape, place it in the machine and play it over the telephone line. The tape is self-rewinding so that when the pharmacist has adjusted the volume of the tape he hangs up his receiver and is free to go on with his duties while the physician listens to the tape. There is an automatic disconnect at the end of the tape and the system is ready for the next call. The library is located in the pharmacy where there is 24-hour coverage.

During the first two years of operation we averaged approximately five calls per day with the pattern of calls reflecting the "gimmick intrest," the poorly designed brochure and the fact that only two announcements of the service were made to the physicians in the state.

Since January of 1968 we have had more rational (and expensive) means of promotion and evaluation. In addition to tabulating the number of calls, we have tried to break down the utilization of the Dial-Access Library into reasonable categories. From January 1968 through June 1969 we have received a total of 9056 Wisconsin calls (exclusive of use by Minnesota and North Dakota physicians) which is approximately 17 calls from medical personnel a day in the two stations which have been established in Wisconsin.

The breakdown of the medical calls we have received shows the service to be one with appeal to General Practitioners who are comparatively isolated from ready consultation and who have less time to utilize more established lines of reference. We have some indirect evidence that specialists are utilizing the library for consultation on subjects outside their own areas of expertise.

Time of day during which calls are received—the majority of calls are coming after 4 P.M. and we are studying the reasons for this. The obvious reasons seem to be appearing.

It is always interesting to know what subjects are principally in demand. It is of some importance, we believe, for this affords us some objective measure of subjects which are of greatest concern to practicing physicians. Table I gives an idea of the "popularity" of the tapes currently in the library. We are left to meditate on the reasons for these calls and the impact of a "catch title."

A postcard or telephone follow-up is done on selected groups of physicians at various times. To date we have had evaluations from approximately 60 percent of those whom we have asked—this comprises 80 percent of the calls made to the library.

General reactions as we have ascertained them to date. Thirteen percent of the calls are for emergency information while 45

percent are for general updating of knowledge not related to a specific patient problem. Ninety percent of the physicians listen to the whole tape and 92 percent who called with a patient problem believe the content of the tape influenced their management of the patient.

So much for the Dial-Access Library. Its utilization is falling off from a high of 33 calls per day in January 1968 (first month of operation) to a low of six calls per day in August 1968. At present the average is 12 calls per day. Like everything else the cost is proportional to the sophistication of the system. Our initial simple system cost $3,000 to set up and run for 12 months but the physicians paid for the telephone call. Currently it is costing us $18,000 annually but we pay the toll charges and have a complex evaluation built into the system.

B. Single Concept Film

The second communications mechanism with which we are experimenting is the Medical Single Concept film. In essence we hope to provide improved health care to patients by making available to physicians and other health care personnel the means by which they can view procedures which have been introduced in recent years. These procedures are quite simple when viewed but seem very complex when described in a text. We are of the opinion that many excellent movies are never viewed because of the difficulty of arranging projectors, screens, darkened rooms, etc., as well as the fact that most medical films run 20-50 minutes, which a physician can rarely afford.

TABLE 1

MOST POPULAR TAPES
Jan. 1, 1968 thru March 1969
(total M.D. calls: 8,805)

1.	Rh Negative Pregnant Patient (Latest Trends in Management)	203
2.	Emergency Treatment of Cardiac Arrhythmias	190
3.	Marriage on the Rocks	161
4.	Management of Status Asthmaticus	158
5.	Treatment of Acute Pulmonary Embolism	156
6.	Summary of Therapy of Advanced Breat Cancer	132
7.	Diagnosis and Treatment of Aspirin Poisoning	112
8.	Present Status of Treatment of Angina Pectoris	111
9.	Management of Anaphylaxis	110
10.	Immediate Care of the Acute Stroke	107

The Single Concept films run 6-20 minutes in a Fairchild Mark IV cartridge loading projector with a 10" by 6" screen. All the physician has to do is press a lever and the pictures and sound start immediately. He does not have to thread a film, darken the room or do anything but watch and listen. Only essential information is in the film and we believe the 6-20 minutes is well invested. This film is self-rewinding too so that if he wishes to view the film a second or third time he merely has to press the lever again.

At present we have six series of film of six each circulating among hospitals in Wisconsin. We supply the projector which is usually placed in the physician's lounge for three weeks. Two films are supplied per week and they must be viewed in that week.

Again, we are engaged in the tedious process of evaluation. It is difficult to know how many people (physicians and non-physicians) have viewed the films. We have a counter on the machine so that we know how many times the machine is turned on for each film.

This Single Concept Film Service has been enthusiastically received. We have twenty projectors circulating to hospitals in Wisconsin and even so, we have bookings for the projectors and film through June of 1970! While we wish we could extend our services to hospitals outside of Wisconsin our requests for the films are so great that we cannot go beyond the state borders at present. Possibly at some future date we can expand this service to interested hospitals outside of Wisconsin.

Present users are small hospitals, some with less than five physicians on the staff to metropolitan hospitals in Milwaukee with several hundred physician staff members. At present 47 hospitals are participating with a combined total of 3,330 physicians and doctors of osteopathy on the staffs. On return counts reporting use we know most physicians are viewing these films plus many nurses and technicians,

where the medical staffs make the films available to allied health personnel.

C. Telephone/Radio Conferences

Our third approach to the problem of health education has been to try to make lectures and discussion from University faculty available on a regular continuing basis in every hospital which resires them. The Telephone/Radio Conference was started in November 1965 with 18 hospital "stations" linked to the University by telephone. Each "station" comprises a loudspeaker, a telephone handset to communicate over the circuit, a carousel slide projector and screen. These are usually set up in a conference room near the hospital cafeteria and regularly scheduled conferences are conducted from the Medical School for various health personnel. It is in effect a state-wide party line in which everyone who has their speaker turned on can hear anything that is said from any station.

The general format involves a 30-minute lecture followed by 30 minutes of questions and discussion from any and many stations on the circuit.

Table 2 shows the growth and extension of the programming over the three years that it has been in existence. Essentially 13,000 individual hours of instruction were given in 1965/1966 and in the 1967/1968 academic year, 80,000 individual hours of instruction were given with neither faculty nor students moving away from their communities or their health care responsibilities.

We have made attempts at evaluating this long-distance manner of teaching in order to satisfy ourselves of our ability to transmit information which is retained by the participant.

The performance of a group of physicians in eleven separate hospitals in the state were matched with a group of medical students. Each group covered the same material on electrocardiographic interpretation with the same lecturer at the same period of the year. The only difference was that the students faced the lecturer in the classroom while the physicians never saw him. Both groups took the same pre-test, post-test, and late post-test. There was no significant difference between the two groups in the pre-test or late post-test.

Finally I would like to say a word about our plans for the future in communications. It is possible to televise live conferences if cost is no object. However, a televised conference has little appeal if the production is poor and the faculty uncomfortable in the medium. It is, moreover, a tremendous expense. We have interst in dveloping the potential of slow-scan television which will be carried by a telephone and a radio link from a classroom in the Medical Center to whatever stations have the reception facility. This will mean that participants at a remote station will have the live voice out of the medical center conference room and the slides, x-rays and visuals utilized in the conference as well as still pictures of the conference room, lecturer, and other speak-

TABLE 2

TELEPHONE CONFERENCE CIRCUIT PROGRAMMING

Course	*Enrollment*	*Lectures*	*Sessions*	*Individual Hous of Instruction*
1965-1966				
Medical Seminars	286	24	48	4,680
Electrocardiography	43	18	18	774
Pediatrics Journal Club	21	3	3	63
Social Work	236	4	4	944
Veterinary Science	119	2	2	588
X-ray Technology	217	1	2	217
Medical Technology	220	1	1	220
Pharmacy*	150	2	2	725
Nursing*	684	12	24	4,807
	1,976	67	104	13,018

*Presented by other University departments

	Enrollment	*Lectures*	*Sessions*	*Individual Hous of Instruction*
1966-1967				
Medical Seminars	326	28	56	9,128
Athletic Injuries	37	8	8	296
Shock	38	8	8	304
Pediatrics Journal Club	25	10	10	250
Internal Medicine	16	4	4	64
Fluid and Electrolytes**	75	6	6	450
Surgery Journal Club**	50	5	5	250
Veterinary Science	57	7	7	798†
X-ray Technology	176	8	8	1,408
Medical Technology	255	8	8	2,040
Social Work* **	200	8	8	1,600
Pharmacy* **	180	13	13	4,680†
Nursing* **	400	8	8	3,200
Hospital Administration*	75	4	4	600†
	1,910	125	153	25,068

*Presented by other University departments
**Estimated; registration not completed
†Indicates two-hour programs

ers, etc., while the conference is in progress. Movement is not possible by this medium but it has other attributes which make it attractive to those who are interested in information diffusion.

Later this month we will be installing slow-scan facilities into Madison General Hospital which has 461 beds and a medical staff of 270 specialists and general practitioners in an urban community of 200,000 population; Richland Center Hospital which has 92 beds and a medical staff of 10 general practitioners, in a rural community of 5,000 population; St. Mary's Hospital, Rhinelander, which has 156 beds and a medical staff of 20 equally divided between general practitioners and specialists in a rural community of 9,000; and finally St. Clare's Hospital in Monroe, which has 165 beds in a rural community of 7,000 served by 48 phycicians—most of whom are specialists. These four community hospitals have had three years experience with the telephone/radio conference and are well qualified to participate in live conferences going on in the University of Wisconsin Medical Center. It is our objective to assess the effect upon the conferences in the medical center as well as to determine the acceptability of slow-scan television as a method of relaying live conferences from a medical center.

Slow-scan television has many other attractive attributes among which are the storage of material on audio-tape at $5.00 an hour rather than videotape at $60.00 an hour, the fact that the system is computor compatible and therefore random access into a taped data bank by many users is a possibility, that color transmission is possible without the expense of color cameras though the transmission time for color is slower than the 60 seconds it takes to transmit a monochrome picture along a television line.

These then are some of the means by which we are hoping to reach our objective of making pertinent, current and authoritative information available to health care personnel throughout Wisconsin in the form they require it and at the time they require it.

These projects have been supported in whole or in part by the

Physicians participating in the programs
United Health Foundations
Wisconsin Regional Medical Program
National Fund for Medical Education

We are grateful for the help and encouragement that has been received from all these sources.

Printed in U.S.A. by Oxmoor Press.